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Troy

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RAW SEQUENCE LISTING

PATENT APPLICATION: US/10/001,245

DATE: 12/16/2002 P6  
TIME: 13:00:10

Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

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3 <110> APPLICANT: HOLM, Jens
4     IPSEN, Henrik
5     LARSEN, Jorgen N.
6     SPANGFORT, Michael D.
8 <120> TITLE OF INVENTION: Novel mutant allergens
10 <130> FILE REFERENCE: 4305/1H942-US2
12 <140> CURRENT APPLICATION NUMBER: US 10/001,245
13 <141> CURRENT FILING DATE: 2001-11-15
15 <150> PRIOR APPLICATION NUMBER: US 60/298,170
16 <151> PRIOR FILING DATE: 2001-06-14
18 <150> PRIOR APPLICATION NUMBER: US 60/249,361
19 <151> PRIOR FILING DATE: 2000-11-16
21 <160> NUMBER OF SEQ ID NOS: 217
23 <170> SOFTWARE: PatentIn version 3.1
25 <210> SEQ ID NO: 1
26 <211> LENGTH: 160
27 <212> TYPE: PRT
28 <213> ORGANISM: Betula verrucosa
30 <220> FEATURE:
31 <221> NAME/KEY: mutation
32 <222> LOCATION: (28)..(28)
33 <223> OTHER INFORMATION:
35 <220> FEATURE:
36 <221> NAME/KEY: mutation
37 <222> LOCATION: (32)..(32)
38 <223> OTHER INFORMATION:
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41 <221> NAME/KEY: mutation
42 <222> LOCATION: (78)..(78)
43 <223> OTHER INFORMATION:
W--> 45 <220>
46 <221> NAME/KEY: mutation
47 <222> LOCATION: (103)..(103)
48 <223> OTHER INFORMATION:
W--> 50 <220>
51 <221> NAME/KEY: mutation
52 <222> LOCATION: (145)..(145)
53 <223> OTHER INFORMATION:
W--> 55 <220>
56 <221> NAME/KEY: mutation
57 <222> LOCATION: (156)..(156)
58 <223> OTHER INFORMATION:
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## RAW SEQUENCE LISTING

DATE: 12/16/2002

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Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

61 &lt;221&gt; NAME/KEY: mutation

62 &lt;222&gt; LOCATION: (160)..(160)

63 &lt;223&gt; OTHER INFORMATION:

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67 Gly Val Phe Asn Tyr Glu Thr Glu Thr Thr Ser Val Ile Pro Ala Ala

68 1 5 10 15

71 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Thr Leu Phe Pro Gln

72 20 25 30

75 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Glu Gly Asn Gly

76 35 40 45

79 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe

80 50 55 60

83 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys

84 65 70 75 80

87 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu

88 85 90 95

91 Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser

92 100 105 110

95 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val

96 115 120 125

99 Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu

100 130 135 140

103 Glu Ala Val Glu Ser Tyr Leu Leu Ala His Ser His Ala Tyr Asn Asn

104 145 150 155 160

107 &lt;210&gt; SEQ ID NO: 2

108 &lt;211&gt; LENGTH: 159

109 &lt;212&gt; TYPE: PRT

110 &lt;213&gt; ORGANISM: Betula verrucosa

112 &lt;220&gt; FEATURE:

113 &lt;221&gt; NAME/KEY: mutation

114 &lt;222&gt; LOCATION: (5)..(5)

115 &lt;223&gt; OTHER INFORMATION:

117 &lt;220&gt; FEATURE:

118 &lt;221&gt; NAME/KEY: mutation

119 &lt;222&gt; LOCATION: (42)..(42)

120 &lt;223&gt; OTHER INFORMATION:

W--&gt; 122 &lt;220&gt;

123 &lt;221&gt; NAME/KEY: mutation

124 &lt;222&gt; LOCATION: (45)..(45)

125 &lt;223&gt; OTHER INFORMATION:

W--&gt; 127 &lt;220&gt;

128 &lt;221&gt; NAME/KEY: mutation

129 &lt;222&gt; LOCATION: (78)..(78)

130 &lt;223&gt; OTHER INFORMATION:

W--&gt; 132 &lt;220&gt;

133 &lt;221&gt; NAME/KEY: mutation

134 &lt;222&gt; LOCATION: (103)..(103)

135 &lt;223&gt; OTHER INFORMATION:

W--&gt; 137 &lt;220&gt;

## RAW SEQUENCE LISTING

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Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

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138 <221> NAME/KEY: mutation
139 <222> LOCATION: (123)..(123)
140 <223> OTHER INFORMATION:
W--> 142 <220>
143 <221> NAME/KEY: mutation
144 <222> LOCATION: (134)..(134)
145 <223> OTHER INFORMATION:
W--> 147 <220>
148 <221> NAME/KEY: mutation
149 <222> LOCATION: (156)..(156)
150 <223> OTHER INFORMATION:
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155 1 5 10 15
158 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys
159 20 25 30
162 Val Ala Pro Gln Ala Ile Ser Ser Val Ser Asn Ile Ser Gly Asn Gly
163 35 40 45
166 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
167 50 55 60
170 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Lys Phe Lys
171 65 70 75 80
174 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
175 85 90 95
178 Lys Ile Ser Asn Glu Ile Val Ile Val Ala Thr Pro Asp Gly Gly Ser
179 100 105 110
182 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Ile Gly Asp His Glu Val
183 115 120 125
186 Lys Ala Glu Gln Val Glu Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
187 130 135 140
190 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser His Ala Tyr Asn
191 145 150 155
194 <210> SEQ ID NO: 3
195 <211> LENGTH: 159
196 <212> TYPE: PRT
197 <213> ORGANISM: Betula verrucosa
199 <220> FEATURE:
200 <221> NAME/KEY: mutation
201 <222> LOCATION: (28)..(28)
202 <223> OTHER INFORMATION:
204 <220> FEATURE:
205 <221> NAME/KEY: mutation
206 <222> LOCATION: (32)..(32)
207 <223> OTHER INFORMATION:
W--> 209 <220>
210 <221> NAME/KEY: mutation
211 <222> LOCATION: (45)..(45)
212 <223> OTHER INFORMATION:
W--> 214 <220>

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## RAW SEQUENCE LISTING

DATE: 12/16/2002

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Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

215 &lt;221&gt; NAME/KEY: mutation

216 &lt;222&gt; LOCATION: (108)..(108)

217 &lt;223&gt; OTHER INFORMATION:

W--&gt; 219 &lt;400&gt; 3

221 Gly Val Phe Asn Tyr Glu Thr Glu Thr Thr Ser Val Ile Pro Ala Ala

222 1 5 10 15

225 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Thr Leu Phe Pro Gln

226 20 25 30

229 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Ser Gly Asn Gly

230 35 40 45

233 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe

234 50 55 60

237 Lys Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys

238 65 70 75 80

241 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu

242 85 90 95

245 Lys Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Gly Asp Gly Gly Ser

246 100 105 110

249 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val

250 115 120 125

253 Lys Ala Glu Gln Val Lys Ala Ser Lys Glu Met Gly Glu Thr Leu Leu

254 130 135 140

257 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn

258 145 150 155

261 &lt;210&gt; SEQ ID NO: 4

262 &lt;211&gt; LENGTH: 159

263 &lt;212&gt; TYPE: PRT

264 &lt;213&gt; ORGANISM: Betula verrucosa

266 &lt;220&gt; FEATURE:

267 &lt;221&gt; NAME/KEY: mutation

268 &lt;222&gt; LOCATION: (5)..(5)

269 &lt;223&gt; OTHER INFORMATION:

271 &lt;220&gt; FEATURE:

272 &lt;221&gt; NAME/KEY: mutation

273 &lt;222&gt; LOCATION: (45)..(45)

274 &lt;223&gt; OTHER INFORMATION:

W--&gt; 276 &lt;220&gt;

277 &lt;221&gt; NAME/KEY: mutation

278 &lt;222&gt; LOCATION: (65)..(65)

279 &lt;223&gt; OTHER INFORMATION:

W--&gt; 281 &lt;220&gt;

282 &lt;221&gt; NAME/KEY: mutation

283 &lt;222&gt; LOCATION: (97)..(97)

284 &lt;223&gt; OTHER INFORMATION:

W--&gt; 286 &lt;220&gt;

287 &lt;221&gt; NAME/KEY: mutation

288 &lt;222&gt; LOCATION: (134)..(134)

289 &lt;223&gt; OTHER INFORMATION:

W--&gt; 291 &lt;400&gt; 4

## RAW SEQUENCE LISTING

DATE: 12/16/2002

PATENT APPLICATION: US/10/001,245

TIME: 13:00:10

Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

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293 Gly Val Phe Asn Val Glu Thr Glu Thr Thr Ser Val Ile Pro Ala Ala
294 1 5 10 15
297 Arg Leu Phe Lys Ala Phe Ile Leu Asp Gly Asp Asn Leu Phe Pro Lys
298 20 25 30
301 Val Ala Pro Gln Ala Ile Ser Ser Val Glu Asn Ile Ser Gly Asn Gly
302 35 40 45
305 Gly Pro Gly Thr Ile Lys Lys Ile Ser Phe Pro Glu Gly Leu Pro Phe
306 50 55 60
309 Asn Tyr Val Lys Asp Arg Val Asp Glu Val Asp His Thr Asn Phe Lys
310 65 70 75 80
313 Tyr Asn Tyr Ser Val Ile Glu Gly Gly Pro Ile Gly Asp Thr Leu Glu
314 85 90 95
317 Ser Ile Ser Asn Glu Ile Lys Ile Val Ala Thr Pro Asp Gly Gly Ser
318 100 105 110
321 Ile Leu Lys Ile Ser Asn Lys Tyr His Thr Lys Gly Asp His Glu Val
322 115 120 125
325 Lys Ala Glu Gln Val Glu Ala Ser Lys Glu Met Gly Glu Thr Leu Leu
326 130 135 140
329 Arg Ala Val Glu Ser Tyr Leu Leu Ala His Ser Asp Ala Tyr Asn
330 145 150 155

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333 &lt;210&gt; SEQ ID NO: 5

334 &lt;211&gt; LENGTH: 159

335 &lt;212&gt; TYPE: PRT

336 &lt;213&gt; ORGANISM: Betula verrucosa

338 &lt;220&gt; FEATURE:

339 &lt;221&gt; NAME/KEY: mutation .

340 &lt;222&gt; LOCATION: (16)..(16)

341 &lt;223&gt; OTHER INFORMATION:

343 &lt;220&gt; FEATURE:

344 &lt;221&gt; NAME/KEY: mutation

345 &lt;222&gt; LOCATION: (28)..(28)

346 &lt;223&gt; OTHER INFORMATION:

W--&gt; 348 &lt;220&gt;

349 &lt;221&gt; NAME/KEY: mutation

350 &lt;222&gt; LOCATION: (32)..(32)

351 &lt;223&gt; OTHER INFORMATION:

W--&gt; 353 &lt;220&gt;

354 &lt;221&gt; NAME/KEY: mutation

355 &lt;222&gt; LOCATION: (103)..(103)

356 &lt;223&gt; OTHER INFORMATION:

W--&gt; 358 &lt;220&gt;

359 &lt;221&gt; NAME/KEY: mutation

360 &lt;222&gt; LOCATION: (108)..(108)

361 &lt;223&gt; OTHER INFORMATION:

W--&gt; 363 &lt;220&gt;

364 &lt;221&gt; NAME/KEY: mutation

365 &lt;222&gt; LOCATION: (152)..(152)

366 &lt;223&gt; OTHER INFORMATION:

W--&gt; 368 &lt;220&gt;

**RAW SEQUENCE LISTING ERROR SUMMARY**

DATE: 12/16/2002

PATENT APPLICATION: US/10/001,245

TIME: 13:00:11

Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

**Please Note:**

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:117; Xaa Pos. 53,54,126,127,199,200  
Seq#:118; Xaa Pos. 53,54,126,127,200,201  
Seq#:119; Xaa Pos. 53,54,103,126,127,198,199  
Seq#:120; Xaa Pos. 52,53,83,122,123,191,192  
Seq#:121; Xaa Pos. 30,52,53,122,123,195,196  
Seq#:122; Xaa Pos. 49,50,119,120,167,189,190  
Seq#:123; Xaa Pos. 45,46,48,75,105,108,109,145,168  
Seq#:124; Xaa Pos. 46,47,101,118,124,125,164,165  
Seq#:125; Xaa Pos. 9,42,43,98,99,100,101,154,155  
Seq#:126; Xaa Pos. 39,42,43,98,99,100,101,153,154  
Seq#:214; Xaa Pos. 1,2

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/001,245

DATE: 12/16/2002

TIME: 13:00:11

Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

L:40 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:33  
L:45 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:38  
L:50 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:43  
L:55 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:48  
L:60 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:53  
L:65 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:58  
L:65 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:1,Line#:63  
L:122 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:115  
L:127 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:120  
L:132 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:125  
L:137 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:130  
L:142 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:135  
L:147 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:140  
L:152 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:145  
L:152 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:2,Line#:150  
L:209 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:202  
L:214 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:207  
L:219 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:212  
L:219 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:3,Line#:217  
L:276 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:269  
L:281 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:274  
L:286 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:279  
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L:291 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:4,Line#:289  
L:348 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:341  
L:353 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:346  
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L:378 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:371  
L:378 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:5,Line#:376  
L:435 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:6,Line#:428  
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L:455 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:6,Line#:448  
L:460 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:6,Line#:453  
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L:527 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:520  
L:532 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:525  
L:537 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:530  
L:542 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:535  
L:547 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:540  
L:552 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:545  
L:557 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:550

## VERIFICATION SUMMARY

PATENT APPLICATION: US/10/001,245

DATE: 12/16/2002

TIME: 13:00:11

Input Set : A:\Sequence Listing (ASCII copy).txt

Output Set: N:\CRF4\12162002\J001245.raw

L:562 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:555  
L:567 M:258 W: Mandatory Feature missing, <223> Blank for SEQ#:7,Line#:560  
L:8041 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:117 after pos.:48  
L:8057 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:117 after pos.:112  
L:8077 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:117 after pos.:192  
L:8106 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118 after pos.:48  
L:8122 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118 after pos.:112  
L:8142 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118 after pos.:192  
L:8171 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:48  
L:8183 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:96  
L:8187 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:112  
L:8207 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:192  
L:8236 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:48  
L:8244 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:80  
L:8252 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:112  
L:8268 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:176  
L:8293 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:16  
L:8301 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:48  
L:8317 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:112  
L:8337 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:121 after pos.:192  
L:8366 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:48  
L:8382 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:112  
L:8394 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:160  
L:8398 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:122 after pos.:176  
L:8423 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:32  
L:8431 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:64  
L:8439 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:96  
L:8451 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:144  
L:8455 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:123 after pos.:160  
L:8480 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:32  
L:8496 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:96  
L:8500 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:112  
L:8512 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:124 after pos.:160  
L:8529 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:0  
L:8537 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:32  
L:8553 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:96  
L:8565 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:125 after pos.:144  
L:8590 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:126 after pos.:32  
L:8606 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:126 after pos.:96  
L:8618 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:126 after pos.:144  
L:12542 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:214 after pos.:0